WHAT IS CLAIMED IS:

1. An apparatus for controlling light propagation, comprising:

a transparent metal stack with at least two regions, said regions being positioned so as to have at least one air gap between said at least two regions; and

mechanical actuator assembly coupled with the transparent metal stack and being constructed and arranged to displace at least one of said two regions in relation to the other region to vary a width of the air gap between said regions, whereby light propagation through the transparent metal stack is controlled in accordance with the width of the air gap.

2. The apparatus for controlling light propagation of claim 1, wherein the mechanical actuator assembly includes a micro-electromechanical switch.

3. The apparatus for controlling light propagation of claim 1, wherein the width of said air gap causes a variance in the index of refraction to be a factor of 2 or greater.

4. The apparatus for controlling light propagation of claim 1, wherein said at least two regions is exactly two regions, a first region and a second region, and wherein said at least one air gap is one air gap between said first region and said second region.

5. The apparatus for controlling light propagation of claim 1, wherein said at least two regions is exactly three regions, a first region, a second region and a third region, and wherein said at least one air gap is two air gaps independent in size, one air gap between said first and said second region and one air gap between said second and said third region.

6. The apparatus of claim 2, further comprising first and second substrate sections bonded together to form a cavity between the substrate sections, each substrate section including a transparently thin flexible membrane opposing the flexible membrane of the other substrate section, wherein the metal stack includes first and second opposing stack regions respectively deposited on the first and second flexible membranes to define the air gap between the first and second stack regions within the cavity, wherein the mechanical actuator assembly controls the air gap width between the first and second stack regions by displacing at least one of the flexible membranes, and an associated one of the first and second regions, toward or away from the other flexible membrane.

7. The apparatus of claim 6, wherein the mechanical actuator assembly is coupled with the first flexible membrane and is arranged and constructed to maintain a predetermined orientation of the first flexible membrane and first stack region while displacing the first flexible membrane and first stack region to control the light propagation.

8. The apparatus of claim 7, wherein the mechanical actuator assembly includes a first pair of spaced actuators contacting an outer surface of the first flexible membrane, and a second pair of spaced actuators contacting an outer surface of the second flexible membrane and positioned to oppose the first pair of actuators.

9. A method of controlling light propagation, comprising the steps of:

placing a transparent metal stack with at least two regions in the path of the light propagation that is to be controlled, said at least two regions having at least one air gap therebetween; and

varying a width of said at least one air gap to establish a desired light propagation characteristics and thereby control the light propagation.

10. The method of claim 9, wherein the step of varying the width of said at least one air gap is accomplished using a Micro-electro-mechanical switch

11. The method of claim 10, wherein the varying step includes the step of maintaining a predetermined orientation of the at least two regions while varying the width of the at least one air gap.

12. The method for controlling light propagation of claim 9, wherein said varying step varies the index of refraction by a factor of 2 or more.